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09/579,846	05/25/2000	Richard Wisniewski	17882-733	8512

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EXAMINER
FORD, JOHN K

ART UNIT	PAPER NUMBER
3743	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/579,846	Applicant(s) Wisniewski
	Examiner FORD	Art Unit 3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 6-26-02

2a)☑ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☑ Claim(s) 2-18 is/are pending in the application.

4a) Of the above claim(s) 4,5,10-17 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☑ Claim(s) 2,3,6-9 and 18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15)☐ Notice of References Cited (PTO-892)

16)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17)☑ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12.

18)☐ Interview Summary (PTO-413) Paper No(s). _____ .

19)☐ Notice of Informal Patent Application (PTO-152)

20)☐ Other:

Applicant's response has been carefully considered. Applicant has amended claim 1 to limit the frequency of the oscillatory driver to a specific range not previously claimed. As well, applicant argues that "agitation" and "oscillation" are not the same thing based on dictionary definitions. This argument fails to address that vibrators, which agitate the fluid, are disclosed in the Wisniewski and Wu article, which states, in pertinent part:

"Another option for providing agitation [to the liquid phase] during thawing is to shake or move the entire tank on a mechanical shaker platform". (Page 134, col.1, third full paragraph).

Further on in the same paragraph, it states:

"This method [i.e., to shake or move the entire tank on a mechanical shaker platform] is quite simple and a septic, however it requires heavy equipment and vibrators and is more expensive to scale up".

In the Examiner's dictionary "shake" means= 1. To cause to move to and fro with jerky movements or 2. To cause to quiver or trembles; vibrate or rock. Similarly, "oscillate" means 1. to swing back and forth with a steady uninterrupted rhythm or 2. to vary between alternate extremes, usually with a definable period".

Finally, "vibrate" means = 1. to move back and forth rapidly or 2. to cause to tremble or quiver. (The American Heritage Dictionary, second college Edition, 1976)

Given the fact that Wisniewski and Wu use a "vibrator" to shake their tank (thereby agitating the contents) there is, in the Examiner's opinion, no difference to be made between a "vibrator" and an "oscillator" given the above definitions. In fact, the

prior art and applicant's systems will, in the Examiner's opinion, agitate the fluid as those oscillatory or vibratory motions will induce waves in the fluid which will bounce off each other and the ever changing geometry of the melting ice mass to produce essentially random motions (i.e., agitation) within the fluid.

Claims 3, 6, 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has advanced, using extrinsic evidence from a dictionary, that oscillation means, "to swing back and forward like a pendulum" (Paper No. 11, page 3, second full paragraph). If that is the case, claim 3 is misdescriptive of the invention because pendulums, by their nature, are harmonic (periodic) devices. It seems that original claim 3 is irreconcilable with this newly advanced definition of "oscillation".

Claims 6-8 attempt to redefine the range of claim 18 in a way so as to broaden it in a dependent claim. This is inherently confusing. Dependent claims are required to further limit (i.e., narrow) the subject matter of the base claims, not to expand it.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2, 3, 6-9 and 18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 18 it now recites an oscillation frequency range of "from about 0.01 Hz to less than about 20Hz" (emphasis supplied to claim language not supported by original disclosure). The specification on page 9, however, does not support this range. Specifically, it states: "the frequency preferably [is] from about 0.01 Hz to about 20 Hz" (page 9, lines 23-24 of the specification). Moreover, this particular range [from "about 0.01 Hz to about 20 Hz"] is buried in the middle of a series of other ostensibly even more preferable ranges including upper range limiting oscillation considerably above 20 Hz (i.e., about 40 Hz, about 1KHz and about 155 KHz).

There has been no showing that applicant, at the time his invention was made, thought or had possession of an invention in the range of from about 0.01 Hz to less than about 20 Hz". In fact the invention, as understood from applicant's own words, placed the most preferable frequencies in the range suggested by the prior art.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 3, 6-9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1992 Wisniweski and Wu article.

See the entire document, but in particular read page 134, col. 1, lines 8-16 and lines 32-39.

The "shaker platform" discussed in lines 32-39, which uses "vibrators" (page 134, col. 1, third full paragraph) is deemed to be an "oscillatory driver" as claimed in claim 18. The heater used during the thawing cycle is discussed on page 135, col. 2, lines 21-32.

Regarding claims 2-3, shaker platforms are known to be harmonic and disharmonic and regarding claims 6-8 are known to come at these frequencies. Moreover the selected frequencies will be largely a function of the mechanical stresses the system will tolerate and hence subject to design choice absent some showing of unexpected results. The specification is devoid of any such showing. Regarding claim 9, this is explicitly taught on page 134, col. 1 lines 32-34.

Claims 2, 3, 6-9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1992 Wisniewski and Wu article (henceforth, the "W &W" article) in view of Baldus.

The W & W article is explained above. Baldus suggest that using oscillations (vibrations) of the heat exchanger surface of 10-50 Hz (preferably greater than 30 Hz), with "disharmonic" rest periods between them, is extremely effective at shedding ice from a heat exchanger surface. To have oscillated the prior art tank at frequencies of 30 Hz-50 Hz with rest periods would have been obvious to quickly shed ice during the thawing cycle. To have used an oscillation of 10 Hz would have been obvious since it is within the range suggested as operable by Baldus to produce the desired result. It is clearly inconsistent for applicant to limit the claim to less than about 20 Hz when his own specification teaches it is "most" preferable to use frequencies between 0.4 Hz and 40 Hz (specification page 9, lines 25-26).

Claims 2, 3, 6-9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1992 Wisniewski and Wu article in view of USP 5,999,701 (Schmidt).

The 1992 W&W article has been explained above. Schmidt discloses an oscillator operating at a frequency of 20-300 Hz to aid in heated thawing frozen liquids (for example injection or infusion solutions). To have operated the vibrators of the W&W prior art at a frequency of 20 Hz would have been obvious to one of ordinary skill to aid in thawing. This is either deemed within applicant's range of less than about 20 Hz or so close to it to render it within that range. See Modine v. ITC, 37 USPQ 2d. 1609, 1615 (Fed. Cir. 1996) on the broadening use of "about" and Titanium Metals v. Banner, 227 USPQ 773, 779 (Fed. Cir. 1985), on values close to range anticipating it.

Claims 2, 3, 6-9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1992 Wisniewski and Wu article in view of DE 3047784 (cited by applicant without translation).

The 1992 Wisniewski and Wu article is discussed above. To have operated the vibrators of W&W article at 4 Hz as disclosed on page 5 of DE '784 at lines 28-30 to aid in ice thawing would have been obvious to one ordinary skill.

Applicant was asked to provide a translation of this reference in the previous office action, a request that was ignored in his response.

Claims 2, 3, 6-9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1992 W&W article in view of the Quan et al. "Effects of Vibration on Ice Contact Melting within Rectangular Enclosures".

The 1992 W&W article is explained above. To have operated the vibrators of the 1992 W&W prior art at 1.1 Hz or .55 Hz or 1.67 Hz to aid in melting would have been obvious from the teachings of the Quan et al. article.

Moreover, since melting rates increase and peak at around 60 Hz, it would have been obvious to the extent possible in the W&W prior art (i.e. within the limits of mechanical stresses that could be imposed on such a large tank without compromising its structural integrity) to vibrate the structure at rates faster than 1-2 Hz would have been obvious from the Quan et al. article.

Claims 2, 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1992 Wisnewski and Wu article in view of Peppers.

The W&W article is explained above. Peppers teaches a vibrator operating at either 3.6 Hz or 20 KHz. To help remove ~~the wing~~ thawing ice from frozen surfaces. To have operated the vibrator(s) of the W&W article at this frequency would have been obvious to attain this beneficial result.

While the frequencies in Peppers are considerably above "about 20 Hz" (claim 18), applicant represents in dependent claim 6 that "about 20 Hz" may apparently go up to 20 GHz.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over any one of the rejections based on the references to Schmidt, DE '784, Quan or Peppers as applied to claim 18 above, and further in view of Baldus.

Baldus teaches disharmonic rest periods to aid in ice removal. To have used such periods in any of the references enumerated in the caption to this rejection would

have been obvious to one of ordinary skill, to aid in ice removal and avoid expending excess energy.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to John K Ford at telephone number 703-308-2636.

John K. Ford
Primary Examiner